



TELSTRA CORPORATION LIMITED

**Telstra submission on
the allocation of Public Telecommunications Services (PTS)
apparatus licences in the 2.1 GHz band**

ACMA Spectrum Planning Discussion Paper

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Executive summary

Telstra welcomes and endorses the proposal of the Australian Communications and Media Authority (ACMA) to issue apparatus licences in the 2.1 GHz band for purposes of deployment of Public Telecommunications Services (PTS) in regional and remote areas of Australia.

However, Telstra has concerns regarding two aspects of the proposed implementation of the new allocation of PMTS Class B apparatus licences.

First, while Telstra anticipates that the majority of PTS assignment applications will be successfully coordinated with *existing* fixed point-to-point wireless usage of the band, Telstra is concerned about the impact of the new apparatus licences on deployment of *future* fixed point-to-point wireless links. In particular, demand is driving the need for greater backhaul capacity in the form of wideband (28 MHz) Ethernet (IP) radio channels in both the 1.8 GHz and 2.1 GHz bands. Telstra proposes steps that can be taken to ameliorate the risk of foreclosure of available spectrum for these future fixed point-to-point wireless links:

- implement either ‘top down’ or ‘bottom up’ assignment rules to the proposed new RALI document applicable to the issue of 2.1 GHz PTS licences; and
- immediately initiate action to implement the new 28 MHz fixed link channel plan in the 2.1 GHz band, to ensure better alignment and more efficient sharing between fixed and mobile services in this band.

Second, Telstra opposes the removal of the requirement that PTS licensees must also hold a carrier licence under the *Telecommunications Act*, if the operation of repeater stations is to be specifically authorized under a PTS licence. Telstra’s position is motivated by repeated incidents of significant interference to its mobile network (including blocking access to emergency services) experienced from mobile “boosters” set up by individuals without Telstra’s knowledge or consent. Telstra believes that amendment of the requirement should be limited to additionally allowing for the two exceptional cases of a nominated carrier declaration and a Ministerial determination under s51 of the *Telecommunications Act*.

Finally, Telstra suggests that should new PMTS Class B apparatus licences be granted to existing mobile operators, to the extent possible ACMA should ensure that the bands in which the apparatus are operating in each case should be aligned with existing spectrum licence holdings of the applicant, so as to facilitate geographic contiguity of bands, which would have benefits such as simplifying call handover.

1. Introduction

Telstra welcomes the opportunity to provide its comments on the proposal of the Australian Communications and Media Authority (ACMA) to issue apparatus licences in the 2.1 GHz band for purposes of deployment of Public Telecommunications Services (PTS) in regional and remote areas of Australia.

Telstra supports the main thrust of the ACMA proposal. It echoes a similar decision several years ago to allow PTS apparatus licences in the 1.8 GHz band to facilitate deployment of GSM technology in those areas outside the geographical boundaries of the 1800 MHz spectrum licences. By offering over-the-counter (OTC) apparatus licences in the 2.1 GHz band to public mobile network operators, the ACMA initiative will enable communities of many significant regional and remote area cities and towns – such as Alice Springs, Karratha, Broome, and Mount Isa, amongst many others – to gain access to more capacity on, and greater choice of, competitive 3G mobile services. Telstra has demonstrated with its NextG™ network that high levels of demand and usage for 3G services exist in regional and remote Australia.

While Telstra endorses ACMA's proposal, there are a number of aspects of the proposal that Telstra suggests should be amended. These concerns are set out below.

2. Preserving future availability of access to spectrum for fixed wireless links

Telstra supports the issue of 2.1 GHz PTS apparatus licences, but is concerned that an unintended consequence may be to limit the ability to satisfy increased future backhaul needs of remote area customers reliant on point-to-point wireless links.

a. Impact on existing wireless point-to-point links will be limited

Telstra anticipates that the majority of 2.1 GHz PTS licences will be focused on providing 'blanket' 3G coverage of clusters of population such as towns and cities in the relevant regional and remote areas. The shorter propagation range of the 2.1 GHz band does not lend itself to cost-effective 3G coverage of rural areas and highways typical of the Australian continent. This suggests that 2.1 GHz PTS apparatus licences will most likely be located on a suitable structure within regional/remote towns and cities, or on nearby hilltops overlooking these towns and cities.

The 2.1 GHz band currently supports a significant number (around one hundred stations) of fixed point-to-point wireless links providing important backhaul for remote radio-telephony services, a number of isolated rural exchanges (in mountainous terrain or distant locations), and other remote customer service scenarios. In contrast with envisaged PTS services, these links are primarily focused on outlying areas distant from towns and cities – although one end of such point-to-point wireless links may sometimes be located on/beside a local exchange within a town or city.

In that context, the majority of PTS assignment applications are anticipated to be successfully coordinated with fixed point-to-point wireless usage of the band. Only in a few cases will some form of interference mitigation be necessary to facilitate band sharing.

b. Potential for impact on future ability to deploy wireless point-to-point links

However, the proposal will have implications for deployment of new fixed point-to-point wireless links in the future. These links will be required to accommodate further anticipated growth in capacity demand by remote customers. Telstra has already alerted ACMA to the demand-driven need for greater backhaul capacity in the form of wideband (28 MHz) Ethernet (IP) radio channels in both the 1.8 GHz and 2.1 GHz bands. This demand continues to build and, as already flagged by Telstra with the ACMA Spectrum Planning group, implementation of these wideband fixed channels is becoming ever more urgent. Telstra's anticipated future need for these fixed point-to-point wireless links will be significant. However, the deployment of such links in the 2.1 GHz band may be foreclosed by the PTS licences that will already have been issued at that point.

c. Proposed amelioration: use 'top down'/'bottom up' priority in PTS assignment rules

A possible part-solution may be to impose PTS licence assignment rules requiring 'top down' or 'bottom up' priority to encourage efficient sharing of the band. More importantly, the earliest promulgation of a new 28 MHz fixed link channel plan, as already suggested to ACMA by Telstra, would ensure more precise alignment with the available 2.1 GHz spectrum block, better facilitating the 'top down' or 'bottom up' PTS assignment rules, and thus minimize resource wastage. This is depicted in Annexure 1.

3. Amendments to the Regulatory Framework

Telstra has reviewed the proposed amendments to the regulatory framework, and agrees that there exist sensible reasons for most of the proposals made by the ACMA. However, Telstra is not satisfied that the ACMA has made out a case for deletion of the carrier licence requirement contained in the *Radiocommunications (Interpretation) Determination 2000*.

a. Withdrawal of PACTS licence category and conversion of PMTS Class A licences

Telstra supports the proposed withdrawal by the ACMA of the PACTS licensing option due to lack of use. Further, as the only existing licensee affected, Telstra accepts the ACMA's proposal for conversion of PMTS Class A licences to PMTS Class B type licences, subject to retention of existing conditions and annual fees.

b. Deletion of the carrier licence requirement in the Radiocommunications (Interpretation) Determination 2000

Telstra does not agree with the ACMA's assertion that the requirement presently contained in the *Radiocommunications (Interpretation) Determination 2000* (the 'Determination'), that a PTS licensee should hold a telecommunications carrier licence in all cases – even where that person would otherwise not be required to hold a carrier licence under section 42 of the *Telecommunications Act 1997 (C'th)* for operation of the relevant device – was “unintended”.¹

Telstra notes that a PMTS licence self-evidently is for supply of *public* mobile telecommunications services. The supply of these services to the public using “network

¹ Discussion Paper, page 14.

units” as defined in the *Telecommunications Act*, for example mobile base stations, would necessarily require a carrier licence. Therefore, if it is the mobile network operator that is establishing a repeater station, that operator will in any event hold a carrier licence. This is an intended alignment of the Determination with the *Telecommunications Act*.

The only respect in which the current Determination is deficient, is that it does not specifically allow for the cases of a nominated carrier declaration² or a Ministerial declaration issued under section 51 of the *Telecommunications Act*. The solution is to amend the Determination to allow for these two exceptional cases in addition to the existing carrier licence requirement. There is no good justification for entirely deleting the carrier licence requirement.

Coupled with amendment of the *Radiocommunications Licence Conditions (PTS Licence)* Determination 1997 (the ‘PTS LCD’) to specifically authorize the use of repeaters using both transmit and base receive frequencies, the deletion of the carrier licence requirement from the Determination would facilitate operation of repeater devices by individuals in a manner that has high interference risks.³ Telstra contends that it was this latter possibility that the current carrier licence requirement in the Determination was intentionally preventing.

The combination of these two amendments results in an opportunity for any individual to make application for a PTS licence specifically to enable operation of a private repeater device. If such repeater devices are not very carefully adjusted by the host network operator, they may cause major uplink interference to public mobile telecommunications networks. Such maladjusted repeater devices can saturate the local host network base station to the extent of blocking all call attempts by other customers, including calls for emergency assistance (000). ACMA technical staff will be aware of a number of major incidents that Telstra has experienced recently with mobile “booster” devices that appear to be freely available for sale to the general public in Australia, notwithstanding that such devices were declared by the ACA (as it then was) to be “prohibited customer equipment” as far back as 9 May 2001.

To avoid such loss of public network access due to uplink interference, Telstra contends that operation of any such transmitters, other than user equipment tested and authorized by the host network operator, must be specifically restricted to a telecommunications carrier licensee or the holder of a nominated carrier declaration.

In the absence of such a condition, a mobile network operator would be obliged to allow connection of equipment that is properly labelled, or exempt from labelling requirements, under section 412 of the *Telecommunications Act*. If such equipment causes a health or safety risk or threatens the integrity of the network, although the network operator would have the right to:

- disconnect the equipment; and
- to take civil action against a person who operated such equipment,⁴

² *Telecommunications Act*, s42. Telstra also notes the exemptions in ss45-50, which Telstra believes are not relevant given that they relate to the use of network units for purposes other than the provision of public mobile telecommunications services.

³ Operation would remain subject to compliance with any relevant restrictions on customer equipment under sections 411 and 450 of the *Telecommunications Act*.

⁴ *Telecommunications Act*, ss 446-448.

it may take time (and expense) for the network operator to identify the location and owner of the equipment. In these circumstances, Telstra believes the interference risks posed by the removal of the carrier licensing condition are unjustified.

Telstra notes, finally, that ACMA's reasoning for removing the carrier licence condition does not set out any specific example of a person who is not a carrier licensee but would wish to hold a PTS licence. The benefit of the amendment, if any, appears to be hypothetical. ACMA's Principle for Spectrum Management #5 suggests that ACMA should balance the cost of interference and the benefits of greater spectrum utilization. The proposed changes should be considered in light of that trade-off: Telstra does not agree that the potentially significant risk of interference by individually-operated cellular repeaters – in circumstances where identifying and addressing that interference after the fact may be a slow and poor remedy – is worth the hypothetical benefit in terms of access to PTS licences by non-carriers that ACMA claims.

Subject to retention of the broadened carrier licence condition, Telstra otherwise agrees with the proposal to vary the definition of a PTS licence in the Determination to refer to the operation of one or more land stations under the licence, and to include specific licence conditions in the PTS LCD that authorize repeater transmissions under a PMTS Class B licence using both transmit and receive frequencies.

4. Allocation to facilitate geographic contiguity with existing holdings of spectrum licensees

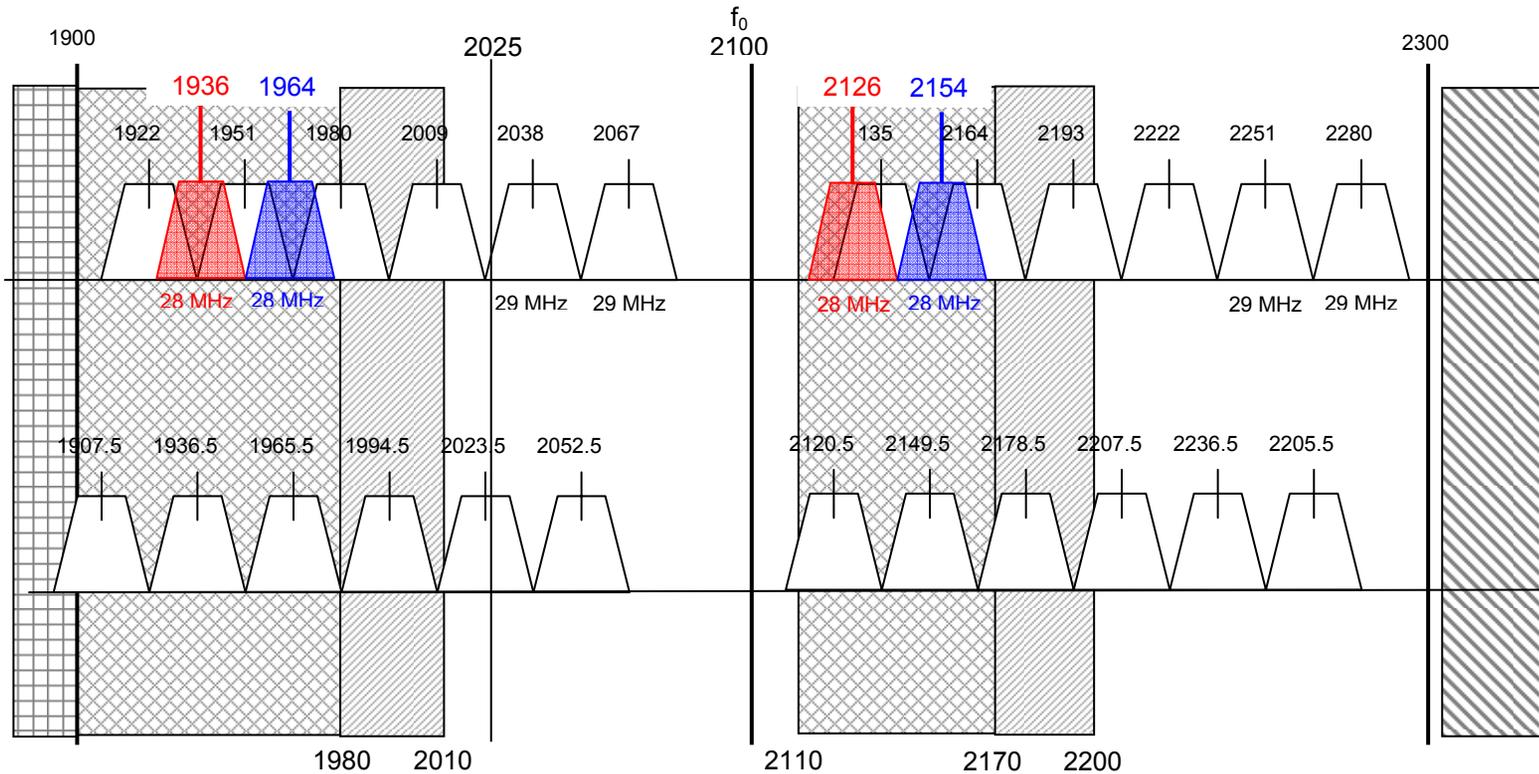
Telstra expects that the newly allocated PMTS Class B apparatus licences will attract applications from existing 2.1 GHz spectrum licensees that are already operating mobile networks. Telstra suggests that should apparatus licences be granted to these existing mobile network operators, to the extent possible ACMA should ensure that the bands in which the apparatus are operating in each case should be aligned with existing holdings of the applicant, so as to facilitate geographic contiguity of bands. This band alignment will have considerable technical and customer benefit, e.g. by simplifying call handover on the borders between apparatus licence and adjacent spectrum licence coverage areas for the existing mobile network operators.

However, in facilitating such contiguity Telstra recognises that ACMA will also need to balance the need for maintaining availability of access to spectrum for future fixed point-to-point wireless links, which requires a "top-down" or "bottom-up" approach in the assignment rules as discussed in paragraph 2(c) above.

Telstra would be glad to discuss with ACMA how alignment may be achieved within the context of the allocation process under the Act.

ANNEXURE 1

2.1 GHz band (1900-2300 MHz) Proposed RF Channel Arrangements



- Shared Cordless band
No new point-to-point fixed services Australia-wide
- 3G spectrum licensed band
in capital city & regional areas.
- Mobile satellite service band.
No new fixed services Australia-wide.
- 2.3 GHz Spectrum
Licensed Band